

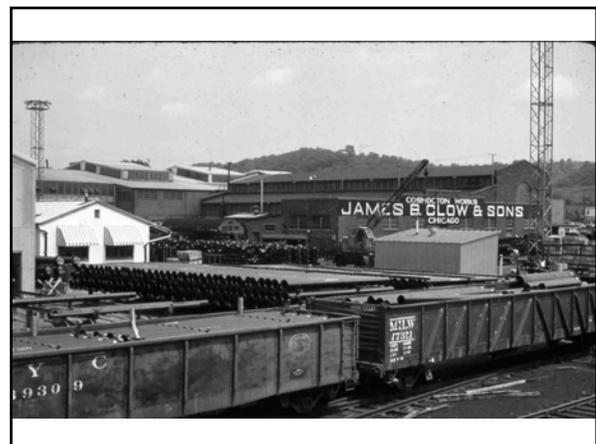
**OSC 10**  
Ohio Safety Congress & Expo

**Improving safety in a high hazard workplace**  
Session 475  
Michael Parker, CSP  
Kent Arnold, President, USW local 7014  
Tuesday, March 30, 2010 2:15 to 3:15 p.m.

Ohio Bureau of Workers' Compensation

**Clow Water Systems**

- o Iron Foundry producing ductile iron pipe and fittings
- o 100 years in operation
- o 400 + employees
- o Division of McWane Inc.
- o United Steelworkers local 7014
- o Video (6:05)





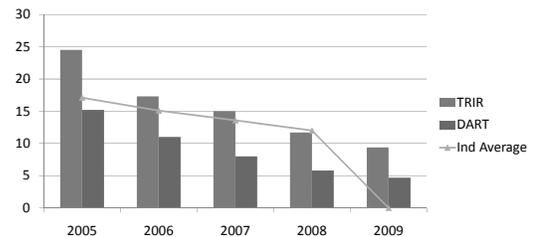
## High hazard jobs

- Pouring 2700 degree iron
- Operations near iron pouring
- Grinding operations
- Machining, milling, drilling
- Large moving machinery
- Hazardous ingredients; silica, coke, oil mist vapors, ect.
- Heavy equipment
- Cranes; overhead movement

## Health and Safety Programs

- Limited safety programs in 2004 – 2006
- Employees had no involvement in safety
- Told what to do, if an employee got hurt, got disciplined
- Very limited safety inspections
- Very limited interaction between employee and supervisor
- Safety was only enforced by safety personnel
- Production ahead of safety

## Injuries and rates

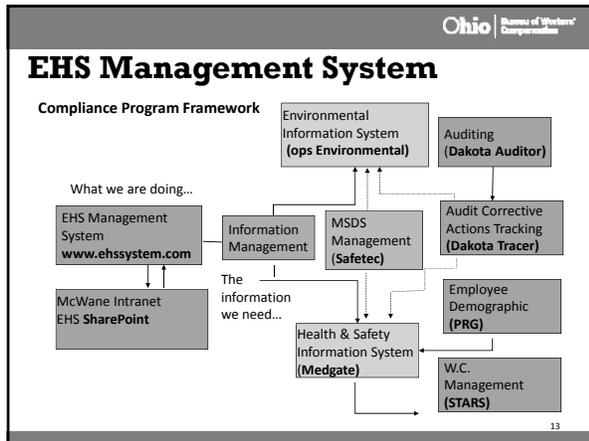


## Changing the safety culture

- Created 42 Health and Safety Programs (HSP), developed 42 facility specific Work Instructions(WI).
- Rolled out the HSP's in increments over two-years.
- Programs comply w/ OSHA, ANSI, ASME, NFPA, ect.
- Developed programs that worked, not created work.
- Tracked results through audits, injury rates and compliance
- Worked jointly w/ union to promote health and safety
- Gain trust

## Changing the safety culture

- Reliance on processes & management systems to DRIVE the process forward
  - Decentralized → Centralized
  - Fire-fighting → Strategic
  - Reactive → Proactive
  - Short Term → Long Term
  - Checklists → Systems



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**McWane, Inc.**  
Pittsburgh, AL

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Report Center

Welcome Michael Parker

### EHS Dashboard

OSHA

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## Changing the safety culture

**Traditional EHS Program** vs. **Mgmt. System Approach**

<ul style="list-style-type: none"> <li>Correction of specific hazard</li> <li>Improvements occur inconsistently or ad-hoc</li> <li>Compliance Focus</li> </ul>	<ul style="list-style-type: none"> <li>Emphasis on eliminating root causes of failures</li> <li>Explicit goal of continual improvement</li> <li>Beyond Compliance</li> </ul>
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<ul style="list-style-type: none"> <li>Replace guard</li> <li>Clean up spill</li> <li>Issue directives for greater vigilance</li> </ul>	<ul style="list-style-type: none"> <li>Improperly guarded machine fixed</li> <li>Install secondary containment</li> <li>Underlying reasons for non-conformance determined</li> </ul>
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## How we did it

- Union presented idea to work towards the OSHA Voluntary Protection Programs in 2007.
- Not a great relationship w/ OSHA
- 2008 OSHA wall to wall inspection, found some small things, but were very impressed w/ improvements
- We knew we the H&S programs were above compliance, but lacked employee involvement
- Jointly started putting committees in place to assist w/ implementation, training, and tracking of results
- Brought in mentors to discuss VPP union

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## Management commitment

- General Manger wrote letter to Union President
- Union supported idea, "Safety is for everybody"
- Management committed funds, resources and time
- Held multiple meetings to discuss commitment, heard from GM, Plant Manager, Safety Manger, Union President – "hear it from the boss"
- Had to quickly show action to gain support;
- Act quickly upon suggestions, hazard reports, ideas
- GM provided resources and funding to install and upgrade equipment, IH sampling, improve training

## Employee involvement

- o Empowered employee to report hazards (yellow tags)
- o Recommend ideas to improve safety
- o Conduct inspections
- o Participate in committees
- o Review procedures
- o Participate in incident investigations
- o Improved communication (monitors in break rooms)
- o Employee involvement in hazard prevention; such as PPE assessments, JSA's, ect.

## Employee involvement

- o Created VPP Steering Committee
- o 4 hourly employees and 4 management
- o Two co-chairmen
- o Asked for volunteers for sub-committees
- o Steering committee started process by completing a gap analysis
- o Created 4 sub-committees
- o Created visual reminders of safety topics

## Employee involvement

- o Steering committee recommended a full time VPP coordinator
- o Creation of 4 subcommittees
- o Creation of Dept. specific subcommittees
- o Opened up lines of communication between employee and supervisor
- o Ensure employees keep supervisors in the loop

## CLOW VPP Committee's

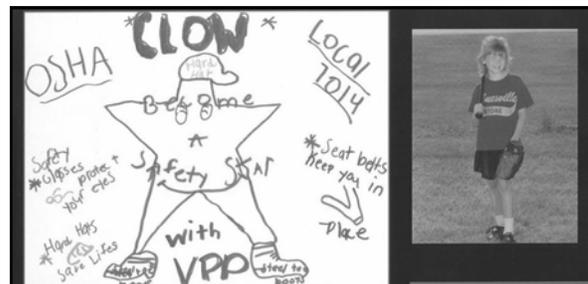


OUR EMPLOYEES  
HAVE WORKED

**188 DAYS**

WITHOUT  
A LOST TIME  
INCIDENT

INCIDENTS  
ARE AVOIDABLE



Safety Message

**When In Doubt - Check It Out.**



Artist

**Kelsey Saylor**  
Age 9

Employee

**Dave Saylor**

### Work site analysis

- o Full plant IH survey, every job, every chemical, even once a year jobs were tested
- o Used 3<sup>rd</sup> party IH's and OSHA to verify results
- o Created task oriented Operator Work Instructions (OWI), these were later used for JSA's.
- o Created various reports to track items
- o Periodic inspections, results communicated and tracked
- o Started to track dept. specific injuries, training completion, housekeeping
- o Used hierarchy of controls to abate hazards (E,A,P)

**CLOW** January 2010 **VPP** Injury Reduction Goals

Goal	Area	Status	Remarks
1	20% reduction of all recordable injuries (TRIR)	<input type="checkbox"/>	Goal 6.64 at 6.27
2	20% reduction in light duty injuries (DART)	<input type="checkbox"/>	Goal 3.5 at 0
3	Housekeeping	<input type="checkbox"/>	As scored by VPP Coordinator at 96%
4	VPP participation	<input type="checkbox"/>	Department VPP Steering Committee meetings – 100% of Depts. participate
5	STOP observations	<input type="checkbox"/>	100% participation by all Departments at 95%
6	Safety inspections	<input type="checkbox"/>	100 % of required monthly inspections

Green = Good       Red = Bad

### Work site analysis

- o Hazard reporting at all levels, report to supervisor first
- o Yellow Tag
- o Quickly gained trust and confidence of employees
- o Quickly seen a difference
- o Required pre-approval for all new chemicals and/or products
- o Incorporated safety and the VPP process in our Continuous Improvement Process (provided resources, time, documented our process and progress, provided employee's and management regular updates)

Serialized for tracking

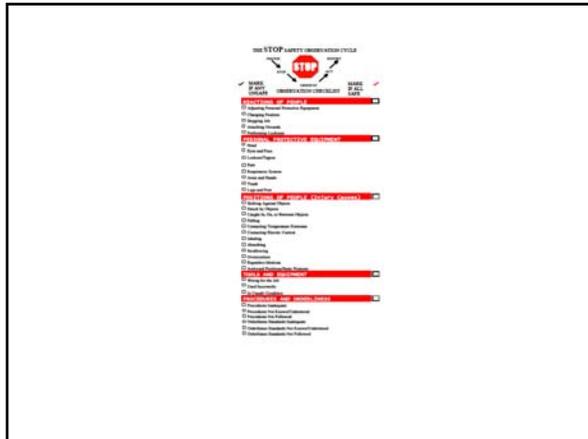
<b>CAUTION</b>		Name (optional): _____
<b>Safety Hazard Under Repair</b>		Date & Time: _____
Hazard: _____		Location: _____
Short description of hazard		Hazard: _____
		Severity: serious, minor, minimal
		W/D Requested Yes No
		W/D No. _____

### Hazard Prevention and control

- o Communicated w/ other pipe plants, sharing of best practices
- o Large investment in pipe handling conveyers vs. manual handling ([manual pipe rolling video](#))
- o Purchased Maximo - lifestyle and maintenance management system for all assets.
- o Use of multiple databases to track:
  - o Chemicals (MSDS), medical data, IH data
  - o Training, injury recording, SharePoint scanning
  - o Inspection items and/or corrections

### Hazard Prevention and control

- o Encouraged supervisor and employee discussions
- o Initiated the STOP Behavior Based System (BBS) program
- o A about a year to work effectively
- o Thank employees for working safely
- o Facilitated supervisor communication about various safety initiatives, led to increased production and better quality
- o Use of Safety Corrective Action Tracking (SCAT) list – weekly review by management on pending items, prioritized, days item open, progress
- o Hazard Abatement Report – used to track other items not on SCAT list



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## Hazard Prevention and control

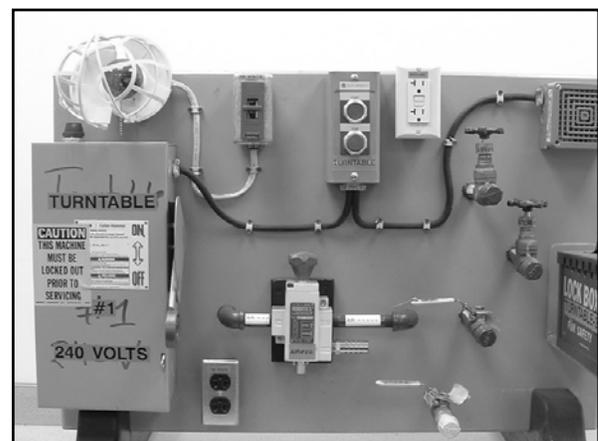
- o Money spent the last 10 years for safety (guarding, monitors, AED's) = 11.6 million
- o Large expenditures: Arc flash hazard analysis, iNet & air monitors, confined space rescue equipment & training, shockwatch, Bullex fire extinguisher trainer
- o During extreme heat months (May – Sept) various fruit and Gatorade is provided to help prevent heat related injuries
- o Employees receive more breaks during this same period
- o Plant Nurse on staff, treats minor injuries



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## Safety and Health training

- o Early 2007 hired a full time trainer (EHS & HR)
- o Developed a health and safety training matrix
- o Developed levels of training level I = awareness training, level II detailed training
- o Developed management training
- o Annual emergency response training
- o Provided high quality specialized training: Crane maintenance, crane operator training, BHLDT training and certifications, Radiation
- o Money spent last 10 years for training to include materials and man hours = 1.7 million



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### Clow Water Systems Dehydration Guide

**Urine Color Test**

1  
2  
3  
4  
5  
6  
7  
8

Dark yellow urine is a sure indicator that you are dehydrated and that water and sports drink consumption must be increased.

Your urine should be between 1 and 3 on the Urine Color Chart.

Desire to urinate less than twice per day and/or producing urine darker than color 3 in this chart indicate severe dehydration and you must start drinking immediately.

**Table 2 Heat Design**

Heat Source	Signs and Symptoms	Heat-Related Phenomena
Heatstroke (heat stroke)	Heat stroke occurs when core body temperature rises above 104°F.	Heatstroke is a medical emergency requiring prompt medical attention.
Heat Cramps	Heat cramps are painful muscle spasms that occur during or after intense physical activity in hot environments.	Heat cramps are caused by electrolyte loss through sweating.
Heat Exhaustion	Heat exhaustion is characterized by heavy sweating, weakness, dizziness, and a rapid pulse.	Heat exhaustion is a warning sign of heatstroke.
Heat Stroke (Cerebral involvement)	Heat stroke with cerebral involvement is characterized by a severe headache, confusion, and loss of consciousness.	Heat stroke with cerebral involvement is a life-threatening medical emergency.

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## Conclusion

- Ask the employee that works on the machine, what can be done to improve safety.
- Quickly address concerns
- Ensure Supervisors stay involved
- Ensure you have continuous improvement
- Seek out and work with the CAVE employees
- Be consistent, don't allow shortcuts
- Understand that not everyone will agree with new procedures, new PPE, - explain why the change was made and who's idea it was.